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A SECTION OF PEST CONTROL MAGAZINE

OCTOBER 1962

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Train Yourself for Plant Pest Control

By A. B. KENNERLY

It's no simple task to learn how to fight insects and diseases of lawns, shrubs, and trees as a full-time business, but many spraymen have paved the way to success with hard work and a self-education plan.

"Contract applicators have a big field waiting to be developed in controlling insects and diseases in ornamentals, lawns and shade trees," observes C. F. Garner, entomologist at Texas A & M College. "And this field is the logical opportunity for CAs and pest control operators who are willing to add this lucrative line to their present business."

New suburban developments bring new homes with new plantings. Older plantings in the established neighborhoods also need care and attention. A tree becomes a landmark. It becomes important to the family, an emotional strength, a symbol of security, and residents will spend money to preserve the tree when insects and disease threaten its existence.

"Operators who go into this business must be well qualified," Garner insists. "The business must be built entirely on satisfactory service by operators who have the answers."

Can the present operators with little experience in plant insect and disease control become proficient in this kind of work?

"Everyone should recognize that he must start where he is right now," Garner explains. "There are logical steps to take to go into this business."

First, make a survey of potential business. This survey should point up the probable demand for the service. Is the community growing or declining, or is it presently at a standstill? What is the expected life of the community in point of homeowners? Will it likely develop soon into an area of cheap boarding and apartment houses?

Assuming that the area in which the CA operates has a good opportunity for future growth and stable home ownership for another 10 to 20 years, how much time can be taken from present operations to devote to plant insect and disease control? This will determine whether it would pay to add this line to present services.

If surveys encourage the firm to go further, information should be collected on insects and diseases it will be called upon to control. "Plant insects and diseases differ in all parts of the nation," Garner reminds. "It is not necessary to learn about all insects — only those that give trouble."

Microscopes a Must for CAs

Collect specimens of the insects. These can be placed with pins in cigar boxes or any other box where the operator can refer to the insects for identification. Many CAs may not know the correct names for all the insects, but these can be identified at a land-grant college or university. Label them and include the dates they were collected and what they were feeding on. Later, the CA may wish to purchase his own miscroscope and use it for identifying insects as he becomes more skilled. There is nothing that will add more prestige to an operator's professional ability than a miscroscope.

Next, start building a file of useful information that will be needed to know about insects, their controls, what they feed on and when, and something about the chemicals used in their control. It takes time to do these things, but they are the foundation of the pest control business dealing with plants.

"A library is essential to keep informed on plant pest controls," Garner points out. "No one book or publication is complete. Copies can be obtained from state experiment stations, county agents, from the U.S. Department of Agricul-

CAs in plant pest control who're teaching themselves "how to do it" can make use of insect identification displays at local extension stations. Here Texas A & M Extension Entomologists C. F. Garner (left) and H. R. Burke examine a handy exhibit. Extension people like to lend a helping hand.

ture, and from commercial concerns who manufacture pest control chemicals."

Keep Reference Library

Two books which Garner recommends are *Diseases and Pests of Ornamental Plants*, published by the Ronald Press Co., 15 East 26th St., New York 10, N.Y., and *Handbook of Pest Control*, published by MacNair-Dorland Co., 254 West 31st., New York 1, N.Y. For 35¢, CAs can purchase "Handbook on Insects of Flowers and Shrubs," U.S. Department of Agriculture, Washington 25, D.C. A new book, *Scientific Guide to Pest Control Operations*, is available from *Pest Control*.

With this backlog of information, the next step is to learn through actual experience. "Applicators will learn that regardless of how much knowledge and experience they gain," Garner observes, "things go wrong and plants are damaged. There are several ways to reduce this damage."

First, Garner suggests establishing a small experimental plot where the operator can try out insecticides and fungicides. Or, he can arrange with some grower who is willing for him to use his plantings. This experience will help to establish confidence in the operator for handling the control measures.

Another idea is to try the controls on one shrub or a small part of the lawn, then return later to observe results. Keep records on these for future reference.

Spray Early or Late in Day

Conditions outside the control of the operator may cause damage. For example, if plants lack water, foliage is more easily burned. Midday is not as good a time to spray as the early or late hours.

"Plant damage is a part of the business," Garner insists. "Be prepared to replace an occasional plant. Make cost estimates to cover this expense over an average period."

Another point to remember in control of plant insects is that it will often be necessary to make repeat applications. There are few one-shot treatments. Have an understanding with the owner regarding these additional treatments and the cost.

CAs can make arrangements with a noncompeting nurseryman for any needed replacements and at the same time learn much from him about plant disease and insect controls. He will be a good source of referral business since he is interested in satisfactory service and good livability of his shrubs and trees. Sometimes the nurseryman may be providing this service, but would rather give it up to devote his time to his nursery business.

By now the aggressive CA will be ready to take on some jobs. Keep detailed information on each contract. Include the conditions, the kind and costs of insecticides or fungicides to do the job, the time of year, the results, and charges. This information will be valuable when a similar job comes up. It could save losses in making estimates.

Disease Control Logical Adjunct

Learning how to control diseases in plants may be difficult. The homeowner, usually unable to distinguish between insect damage and disease damage, will expect contractors to treat for either. However, methods for learning plant disease control are similar to those for learning control of insects. One can learn where plant diseases can be diagnosed from state universities, although this service is limited in many states. It may be difficult to keep disease specimens.

Garner gives 5 essentials to be observed for controlling ornamental pests:

1. Use the best equipment you can buy to apply the insecticides and fungicides.
2. Select the right control measures.
3. Apply the controls in the proper manner.
4. Start control measures before serious damage occurs. This may not always be possible if homeowners delay, but the CA with contracts for regular care can avoid these situations.
5. Repeat applications must be made in 7 to 10 days for certain pests such as scales, white flies, and spider mites.

In time CAs will learn some short cuts such as combination sprays that will save time and money. These combinations can control a variety of insects.

Once established, there are several ways to obtain new business. Nurserymen can be helpful by referring their customers, unless they offer a similar service. Newspaper advertising, radio spots, direct mail to new homeowners and to selected mailing lists are helpful. One operator gives demonstrations on television.

Another operator who has an established business in pest controls on ornamental shrubs, lawns, and trees has collected a file of color slides showing various activities of his work. He shows these to garden clubs, womens' clubs and other organizations who ask him to give a program showing how to control insects in their ornamentals. While giving self-help ideas, he is also indirectly reminding them that his work is pest control. This brings him considerable business.

Future possibilities in this work are unlimited. Harlan E. Smith, plant pathologist for Texas A & M College, points to the many opportunities in controlling plant diseases and the lack of qualified people to handle the work.

"Trends now point to graduating students from colleges and universities who are fully trained to handle every kind of trouble in plants," Smith predicts. "These people would be as capable of attending to every need of plants as the veterinarian is of animals. We are arousing interest in this need and students are becoming interested. In addition to entomology and plant pathology, students who desire to qualify themselves for this work should also learn agricultural chemicals. These would include herbicides, insecticides, fungicides, and nematocides. Then, there should be additional training in plant physiology and soils."

Contract applicators who are presently training themselves in these fields will continue their search for efficient business and finance management. And this will be good. These young fellows who graduate with skilled training in the sciences of pest control work won't have business experience. They will want to go to work for *you*.

Close Attention to Spray Tools Is Key to Economical Operation

Weed-spraying equipment has to be shipshape to achieve an efficient job. It is obviously important for CAs to formulate carefully and diagnose thoroughly the infestation to be treated, but these precautions are of no avail if machinery isn't properly cared for.

Sprayers usually have about nine essential parts: sprayer tank, measuring device for tank, filler hole for tank, pump, filter between tank and boom, by-pass valve, pressure gauge, boom, and nozzle.

Here are some pointers, from the Saskatchewan Department of Agriculture, which give CAs some short cuts to economy and efficiency:

Tank. Aluminum or galvanized tanks of 150 to 200 gallons have been found quite satisfactory for certain big jobs. CAs who use a tractor-mounted tank may want to stick to 80 or 90 gallons. These recommendations are for large projects (like golf courses or highway medians) where the application is similar to agricultural work. (In the USA, many prefer tanks of larger capacity.)

Measuring devices. For a money-saver, measuring devices can be as basic as an ordinary stick calibrated in gallons. These sticks can be homemade by pouring a specified amount of chemical into the tank, and marking the measuring stick accordingly.

Filler hole. This hole should be some 8 inches across, big enough to sweep sediment from the corner of the tank. Frequently there is a screen over this hole to remove impurities from fluids poured in.

Pump. Most common types of sprayers for pumps are the gear-type and the machine with nylon rollers. Preference is for the latter, because the gear-type tends to wear faster and lose pressure. Suspended material tends to wear a gear pump.

Capacity of most pumps in widespread use is 5-10 gal/min.

It's also convenient to have a clean-out valve in the bottom of the tank so cleaning is rapid and easy. A sump collects material for easy disposal. It is best to have the outlet slightly above the bottom of the tank so sediment doesn't fill up the drain hole.

Filters. Chemical should be filtered between tank and boom.

By-pass valve. This device both holds pressure of chemical evenly on the boom and passes excess material back into the tank again. This returning fluid flows back into the tank and keeps chemical mixed up in the water.

Pressure gauge. This is the last mechanism solutions pass through before going to the boom, and is the gauge used to determine pressure in the boom. A handy shut-off valve should be attached so the flow of material can be turned off from the tractor or from the cab of the truck. The suck-back shut-off valve is best.

Boom. Booms should be easy to raise and lower, and should have a good range of height. It's essential the boom is just high enough so spray patterns overlap. With 20-inch nozzle spacings, this is usually 21-23 inches above the ground to be sprayed.

A sturdy boom prevents uneven spray patterns which may result when booms whip back and forth. It is desirable to keep the boom from bobbing up and down because if the boom is too low, there is no spray overlap, and if too high, too much overlap. A stiff brace will help hold the boom steady.

It's easy to see how a swinging boom can cause an uneven spray pattern. If the vehicle is traveling 4 miles an hour and the boom is swinging forward at 4 miles an hour, the net effect is a boom traveling 8 miles an hour.

Conversely, a boom that swings back 4 miles an hour at the same vehicle speed gives a net boom speed of 0 miles an hour, and an uneven spray pattern results.

Most booms have a clean-out valve at the end. Water should be pumped through the boom before it is used to flush out sediment. Hose connections should, of course, be tight so spray cannot escape.

Nozzles. Common nozzles for weed control chemicals have 80 to 100 mesh screens to keep small bits of chemical from plugging up the nozzle tip.

Nozzles send out a fan-shaped spray. When nozzles are placed at a 5° angle on the boom, sprays run parallel without any turbulence. Each nozzle is designed to put out a specific amount of chemical per minute.

Worn nozzles can be costly because too much chemical is applied to the area. If these nozzles spray more than 10% over the recommended rate, replace tips.

Rate of spray of each nozzle can be checked by running water through the sprayers. The amount of material any type nozzle should apply at a given pressure is listed in the manufacturer's specifications. In one minute, the cup should fill to the recommended rate. Then measure the rate of the next nozzle and so on through the entire sprayer. Badly worn nozzles should have their tips replaced.

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Guide to Suppliers of Weed & Turf Chemicals

Weeds and Turf presents below the first Guide to Suppliers of vegetation control chemicals for use by Contract Applicators in urban/industrial areas. There is a mixture of common and trade-marked names (indicated by an asterisk*). This has been unavoidable since usage and recommendations of researchers refer to a particular chemical by one or the other, depending upon the newness of the compound, whether its common name is easier to use, or industry acceptance. There will also be some differences of opinion over the inclusion or omission of certain chemicals under particular use categories. Here again confusion exists among reference sources. We have made our choices on the basis of most frequent mention in our surveys which preceded this compilation. Readers' comments and suggestions are invited to help us improve future editions. Keep this year's Guide handy for frequent use.

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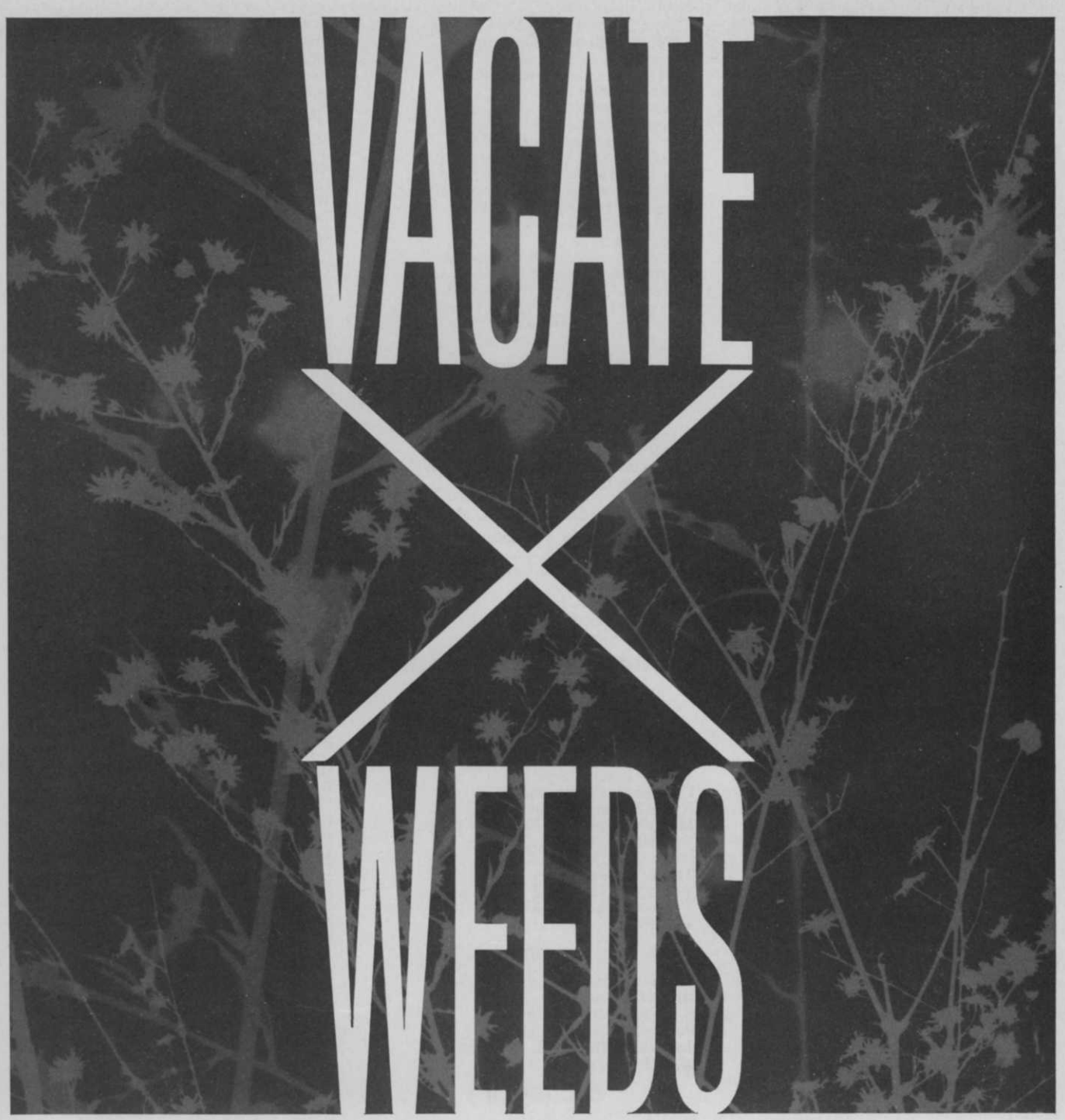

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ZYTRON*

Dow Chemical Co.

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United Chemetrics
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See Pre-Emergent Herbicides

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Miller Chemical & Fertilizer Corp.
Miller Products Co.
Nalco Chemical Co.
Patterson Chemical Co., Inc.
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Riverdale Chemical Co.
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2,4-D

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2,4,5-T

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Nalco Chemical Co.
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Chipman Chemical Company is the oldest and largest custom applicator of herbicides in the country. Its long, firsthand experience in the use of chemicals for all types of weed problems can be extremely beneficial to you. As a weed killer manufacturer with this unmatched background in application problems, the Company offers its "know-how" to all those engaged in weed control.

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Taylor Chemical Co.
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Hub States Chemical & Equipment Co.
Los Angeles Chemical Co.
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Chapman Chemical Co.
Chipman Chemical Co., Inc.
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Diamond Alkali Co.
Doggett-Pfeil Co.
E-Z Flo Chemical Co.
Eastern Seaboard Supply Corp.
Faesy & Besthoff, Inc.
Fallek Products Co., Inc.
Flag Sulfur & Chemical Co.
General Chemical Div., ACC
Hayes-Sammons Chemical Co.
Henley & Co., Inc.
Hooker Chemical Corp.
Hub States Chemical & Equipment Co.
Lobel Chemical Corp.
Lorenz Chemical Co.
Los Angeles Chemical Co.
Mercury Chemical Co., Inc.
Miller Chemical & Fertilizer Corp.
Mineral Fertilizer Co.
Mutchler Chemical Co., Inc.
Niagara Chemical Div., FMC
Patterson Chemical Co., Inc.
S. B. Penick & Co.
Pennsalt Chemicals Corp.
Pest Control Equipment Co.
Phillips Brothers Chemicals, Inc.
B. G. Pratt Co.
Prentiss Drug & Chemical Co., Inc.
Private Brands, Inc.
Pyrrole Chemical Corp.
Residex Corp.
Riverdale Chemical Co.
Robeco Chemicals, Inc.
Rockland Chemical Co., Inc.
Schmitz-Schoenwaldt-Turner Co.
Shepard Div. of Samincorp
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
Triangle Chemical Co.
United Chemetrics
Utility Chemical Co.
Wilbur-Ellis Co.
Woodbury Chemical Co.
Woolfolk Chemical Works, Ltd.
York Chemical Co., Inc.

MALATHION

Agricultural Specialties, Inc.
American Cyanamid Co.
American Fluoride Corp.
American Liquid Fertilizer Co.
American Oil Co.
Black Leaf Products Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Chapman Chemical Co.
Chipman Chemical Co., Inc.
Continental Chemiste Corp.
Doggett-Pfeil Co.
E-Z Flo Chemical Co.
Eastern Seaboard Supply Corp.
Faesy & Besthoff, Inc.
General Chemical Div., ACC
Hayes-Sammons Chemical Co.
Hub States Chemical & Equipment Co.
Lobel Chemical Corp.
Los Angeles Chemical Co.
Mercury Chemical Co., Inc.
Miller Chemical & Fertilizer Corp.
Mineral Fertilizer Co.
Niagara Chemical Div., FMC
Olin Mathieson Chemical Co.
Patterson Chemical Co., Inc.
Pennsalt Chemicals Corp.
Pest Control Equipment Co.
Pittsburgh Plate Glass, Chem. Div.
B. G. Pratt Co.
Prentiss Drug & Chemical Co., Inc.
Pyrrole Chemical Corp.
Residex Corp.
Riverdale Chemical Co.
Rockland Chemical Co., Inc.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
United Chemetrics
Wilbur-Ellis Co.
Woodbury Chemical Co.
Woolfolk Chemical Works, Ltd.

METACIDE

Chemagro Corp.
E-Z Flo Chemical Co.
United Chemetrics
Wilbur-Ellis Co.

easy turf and weed control—

with a famous

FONTAN

THE R.5 FONTAN FOR HEAVY DUTY
WEIGHT 37 LBS.

A self-contained unit, the Fontan has jets to interchange for misting or spraying, another attachment to interchange for dusting. Designed for versatility, dependability and safety, the Fontan has metal frame and padded straps for comfortable operation.

FONTAN + MALATHION = ECONOMY

The Fontan adjusts to allow low-volume spraying with less dilute liquid and a higher concentration of Malathion or other chemical. Both Fontans offer complete portability, choice of droplet size, easy maintenance, safe fuel injection, corrosion-resistant plated parts.

THE R.6 FONTAN FOR SMALLER JOBS
WEIGHT 24 LBS.

A torch interchanged with the spray head and nozzle converts either Fontan into a flame thrower for weed killing, snow removal, burning off paint, heating tar for roofs and street repairs, and numerous similar tasks.

SOUTHERN MILL CREEK PRODUCTS COMPANY, Inc.
BOX 4297, TAMPA, FLORIDA
Please send further information on:
___R.5 FONTAN ___R.6 FONTAN ___MALATHION
NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

See You at Booth 81
Kansas City, October 21-25
NPCA Convention and Trade Show

NATIONAL DISTRIBUTORS OF INSECTICIDES, EQUIPMENT AND WEED KILLERS

SMCP Southern MILL CREEK PRODUCTS COMPANY, Inc.

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Insecticides (Cont.)

METHOXYCHLOR

E. I. duPont de Nemours & Co.
Geigy Agricultural Chemicals

PARATHION

Agricultural Chemicals, Inc.
American Cyanamid Co.
American Fluoride Corp.
American Liquid Fertilizer Co.
American Potash & Chemical Corp.
Brayton Chemicals, Inc.
Browning Chemical Corp.
California Chemical Co., Ortho Div.
Chemagro Corp.
Chipman Chemical Co., Inc.
Commerce Petroleum Co.
E-Z Flo Chemical Co.
Eastern Seaboard Supply Corp.
Faesy & Besthoff, Inc.
Flag Sulfur & Chemical Co.
Fresno Agricultural Chemicals Co.
General Chemical Div., ACC
Globe Chemical Co.
Hayes-Sammons Chemical Co.
Lobel Chemical Corp.
Los Angeles Chemical Co.
Mercury Chemical Co., Inc.
Michlin Chemical Corp.
Miller Chemical & Fertilizer Corp.
Mineral Fertilizer Co.
Monsanto Chemical Co.
Mutchler Chemical Co., Inc.
Niagara Chemical Div., FMC
Olin Mathieson Chemical Co.
Patterson Chemical Co., Inc.
Pennsalt Chemicals Corp.
Pittsburgh Plate Glass, Chem. Div.
Plant Products Corp.
Prentiss Drug & Chemical Co., Inc.
Schmitz-Schoenwaldt-Turner Co.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
Triangle Chemical Co.
United Chemetrics
Velsicol Chemical Corp.
Wilbur-Ellis Co.
Woodbury Chemical Co.
Woolfolk Chemical Works, Ltd.

SEVIN*

American Fluoride Corp.
Black Leaf Products Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Chapman Chemical Co.
Doggett-Pfeil Co.
E-Z Flo Chemical Co.
Faesy & Besthoff, Inc.
Fairfield Chemicals, FMC
Florida Agricultural Supply Co.
Lebanon Chemical Corp.
Los Angeles Chemical Co.
Mercury Chemical Co., Inc.
Michlin Chemical Corp.
Miller Chemical & Fertilizer Corp.
Miller Products Co.
Mineral Fertilizer Co.
Niagara Chemical Div., FMC
Patterson Chemical Co., Inc.
Plant Food Corp.
Private Brands, Inc.
Residex Corp.
G. S. Robins & Co.
Rockland Chemical Co., Inc.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
Union Carbide Chemicals Co.
United Chemetrics
Wilbur-Ellis Co.
Woodbury Chemical Co.
Woolfolk Chemical Works, Ltd.
York Chemical Co.

SULFOTEPP

Plant Products Co.
Virginia Chemicals & Smelting Co.

TRITHION*

Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
E-Z Flo Chemical Co.
Faesy & Besthoff, Inc.
Lobel Chemical Corp.
Los Angeles Chemical Co.
Mercury Chemical Co., Inc.
Miller Chemical & Fertilizer Corp.
Mineral Fertilizer Co.
Niagara Chemical Div., FMC
Patterson Chemical Co., Inc.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Wilbur-Ellis Co.
Woodbury Chemical Co.

VC-13

See Nematocides

MITICIDES

ARAMITE*

Black Leaf Products Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Chipman Chemical Co., Inc.
Doggett-Pfeil Co.
E-Z Flo Chemical Co.
General Chemical Div., ACC
Lobel Chemical Corp.
Los Angeles Chemical Co.
Naugatuck Chemical
Niagara Chemical Div., FMC
Patterson Chemical Co., Inc.
Pennsalt Chemicals Corp.
Pittsburgh Plate Glass, Chem. Div.
Pyrrole Chemical Corp.
Riverdale Chemical Co.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
United Chemetrics
Wilbur-Ellis Co.

CHLOROBENZILATE

Geigy Agricultural Chemicals
Prentiss Drug & Chemical Co., Inc.

DIBROM*

See Insecticides

DIMITE*

Acme Quality Paints, Inc.
E-Z Flo Chemical Co.
Patterson Chemical Co., Inc.
Pennsalt Chemicals Corp.
Taylor Chemical Co.

DISYSTON*

See Insecticides

ETHION

See Insecticides

GENITE

Brayton Chemicals, Inc.
General Chemical Div., ACC
Miller Chemical & Fertilizer Corp.
Wilbur-Ellis Co.

KELTHANE*

Black Leaf Products Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
E-Z Flo Chemical Co.
Lobel Chemical Corp.
Los Angeles Chemical Co.
Miller Chemical & Fertilizer Corp.
Miller Products Co.
Patterson Chemical Co., Inc.
Residex Corp.
Rockland Chemical Co., Inc.
Rohm & Haas Co.
Southern Mill Creek Products Co.
Taylor Chemical Co.
United Chemetrics
Wilbur-Ellis Co.
Woodbury Chemical Co.
Woolfolk Chemical Works, Ltd.

OVEX

American Potash & Chemical Corp.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Diamond Alkali Co.
Dow Chemical Co.
E-Z Flo Chemical Co.
Flag Sulfur & Chemical Co.
General Chemical Div., ACC
Lobel Chemical Corp.
Los Angeles Chemical Co.
Michlin Chemical Corp.
Miller Chemical & Fertilizer Corp.
Niagara Chemical Div., FMC
Pittsburgh Plate Glass, Chem. Div.
G. S. Robins & Co.
Stauffer Chemical Co.
Taylor Chemical Co.
United Chemetrics
Wilbur-Ellis Co.

SULFOTEPP

See Insecticides

TEDION

American Liquid Fertilizer Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
E-Z Flo Chemical Co.
Faesy & Besthoff, Inc.
General Chemical Div., ACC
Los Angeles Chemical Co.
Miller Chemical & Fertilizer Corp.
Mineral Fertilizer Co.
Niagara Chemical Div., FMC
Patterson Chemical Co., Inc.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
Wilbur-Ellis Co.

TRITHION*

See Insecticides

NEMATOCIDES

D-D

Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Dow Chemical Co.
Hayes-Sammons Chemical Co.
Lobel Chemical Corp.
Mineral Fertilizer Co.
Patterson Chemical Co., Inc.
Riverdale Chemical Co.
Shell Chemical Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
United Chemetrics
Wilbur-Ellis Co.
Woolfolk Chemical Works, Ltd.

DICHLOROPROPENES

Dow Chemical Co.
E-Z Flo Chemical Co.
Shell Chemical Co.
Thompson-Hayward Chemical Co.
Wilbur-Ellis Co.

NEMAGON*

Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Chapman Chemical Co.
E-Z Flo Chemical Co.
Hayes-Sammons Chemical Co.
Los Angeles Chemical Co.
Miller Chemical & Fertilizer Corp.
Patterson Chemical Co., Inc.
Shell Chemical Co.
Southern Mill Creek Products Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
United Chemetrics
Wilbur-Ellis Co.

VAPAM*

Brayton Chemicals, Inc.
Doggett-Pfeil Co.
E. I. duPont de Nemours & Co.
E-Z Flo Chemical Co.
Faesy & Besthoff, Inc.
Hayes-Sammons Chemical Co.
Los Angeles Chemical Co.
Miller Chemical & Fertilizer Corp.
Mineral Fertilizer Co.
Patterson Chemical Co., Inc.
Residex Corp.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
Wilbur-Ellis Co.

VC-13*

Doggett-Pfeil Co.
E-Z Flo Chemical Co.
Lobel Chemical Corp.
Miller Chemical & Fertilizer Corp.
Patterson Chemical Co., Inc.
Pennsalt Chemicals Corp.
Southern Mill Creek Products Co.
Taylor Chemical Co.
Virginia-Carolina Chemical Corp.

VORLEX

E-Z Flo Chemical Co.
Morton Chemical Co.

SOIL FUMIGANTS

CHLOROPICRIN

Brayton Chemicals, Inc.
Dow Chemical Co.
Neil A. Maclean Co., Inc.
Morton Chemical Co.
Patterson Chemical Co., Inc.
Residex Corp.
Southern Mill Creek Products Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
Wilbur-Ellis Co.

D-D

See Nematocides

ETHYLENE DIBROMIDE

American Potash & Chemical Corp.
Brayton Chemicals, Inc.
Dow Chemical Co.
E-Z Flo Chemical Co.
Eastern Seaboard Supply Corp.
Michigan Chemical Corp.
Niagara Chemical Div., FMC
Olin Mathieson Chemical Co.
Pest Control Equipment Co.
Residex Corp.
Southern Mill Creek Products Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
United Chemetrics
Wilbur-Ellis Co.
Woodbury Chemical Co.

METHYL BROMIDE

American Potash & Chemical Co.
Brayton Chemicals, Inc.
California Chemical Co., Ortho Div.
Doggett-Pfeil Co.
Dow Chemical Co.
E-Z Flo Chemical Co.
Eastern Seaboard Supply Corp.
Frontier Chemical Co.
Great Lakes Chemical Co.
Lobel Chemical Corp.
Los Angeles Chemical Co.
Neil A. Maclean Co., Inc.
Michigan Chemical Co.
Miller Chemical & Fertilizer Co.
Morton Chemical Co.
Niagara Chemical Div., FMC
Olin Mathieson Chemical Co.
Patterson Chemical Co., Inc.
Pest Control Equipment Co.
Residex Corp.
Southern Mill Creek Products Co.
Stauffer Chemical Co.
Taylor Chemical Co.
Thompson-Hayward Chemical Co.
United Chemetrics
Wilbur-Ellis Co.
Woodbury Chemical Co.

MYLONE*

Brayton Chemicals, Inc.
E-Z Flo Chemical Co.
Miller Chemical & Fertilizer Corp.
Niagara Chemical Div., FMC
Selco Supply Co.
Union Carbide Chemicals Co.

VAPAM*

See Nematocides

VORLEX

See Nematocides

SPREADER STICKERS

Agricultural Specialties
E. I. duPont de Nemours & Co.

Alphabetical Listing of Suppliers in this Buyer's Guide with their Complete Addresses

A

Acme Quality Paints, Inc., 8250 St. Aubin Ave., Detroit, Mich.
Aecto Chemical Co., Inc., 40-40 Lawrence St., Flushing, N.Y.
Agricultural Chemicals, Inc., P.O. Box 398, Llano, Texas
Agricultural Specialties, Inc., P.O. Box 14231, Dallas 34, Texas
Amchem Products, Inc., Box 301, Ambler, Pa.
American Cyanamid Co., Ag. Chem. Div., P.O. Box 400, Princeton, N.J.
American Fluoride Corp., 855 Ave. Americas, New York, N.Y.
American Liquid Fert. Co., Inc., P.O. Box 267, Marietta, Ohio
American Oil Co., 910 S. Mich. Ave., Chicago 80, Ill.
American Potash & Chemical Corp., 3000 W. 6 St., Los Angeles 54, Calif.
Ansul Chemical Co., 1 Stanton St., Marinette, Wis.

B

Baird Chemical Corp., 10 W. 33 St., New York 1, N.Y.
J. T. Baker Chemical Co., Phillipsburg, N.J.
Barada & Page Co., Guinotte Ave., Kansas City 20, Mo.

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MURRAY HILL 3-7500

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Braun-Knecht-Heimann Co., 1400 16 St.,
San Francisco 19, Calif.
Brayton Chemicals, Inc.,
P.O. Box 56, Burlington, Iowa
Browning Chemical Corp.,
295 Madison Ave., New York 17, N.Y.
Brulin & Co., 2939 Columbia Ave.,
Indianapolis 7, Ind.

C

California Chemical Co., Ortho Div.,
Lucas & Ortho, Richmond, Calif.
California Farm Supply Co.,
2223 Fulton St., Berkeley 4, Calif.
Calumet & Hecla, Inc., Calumet Div.,
7 Calumet Ave., Calumet, Mich.
Central Solvents & Chemicals Co.,
2540 Flournoy St., Chicago 12, Ill.
Chapman Chemical Co., Box 3158,
Mallory Station, Memphis 9, Tenn.
Chemagro Corp., P.O. Box 4913,
Kansas City 20, Mo.
Chemical Affiliates, Inc.,
274 Madison Ave., New York 16, N.Y.
Chipman Chemical Co., Inc.
Bound Brook, New Jersey
City Chemical Corp., 132 W. 22 St.,
New York 11, N.Y.
W. A. Cleary Corp., P.O. Box 749,
New Brunswick, N.J.
Cole & DeGraf, 656 Townsend St.,
San Francisco 3, Calif.
Commerce Petroleum Co.,
2980 Archer Ave., Chicago 8, Ill.
Commercial Chemicals Co.,
P.O. Box 86, Memphis 1, Tenn.
Conray Products Co., 129F Pearl St.,
New York 5, N.Y.
Consolidated Industrial &
Agricultural Chemicals, Inc.,
1517 Fifth Street, Sandusky, Ohio
Continental Chemiste Corp.,
2256 Ogden Ave., Chicago 12, Ill.
Cotton States Chemical Co., Inc.,
P.O. Drawer 157, West Monroe, La.

D

Delta Chemical Works, Inc.,
23 W. 60th St., New York 23, N.Y.
DeMert & Dougherty, Inc.,
5000 W. 41st St., Chicago 50, Ill.
Destruxol Corp., Ltd.,
495 Arroyo Pkwy., Pasadena, Calif.
Diamond Alkali Co.,
Union Commerce Bldg., Cleveland, O.
Dixie Solvents & Chemicals Co.,
Appleton Lane, Louisville 16, Ky.
Doggett-Pfeil Co., 191 Mountain Ave.,
Springfield, N.J.
Dow Chemical Co., Ag. Chem. Div.,
Midland, Mich.
E.I. duPont de Nemours & Co., Inc.,
Ag. Chem. Dept., Wilmington, Del.

E

E-Z Flo Chemical Co.,
P.O. Box 808, Lansing 3, Mich.
Eastern Seaboard Supply Corp.,
145 Franklin, Valley Stream, N.Y.
Eastern States Farmers' Exchange,
26 Central Street,
West Springfield, Mass.
Edco Corp., Childs Rd., Elkton, Md.
B.R. Elk & Co., Inc.,
193 Palisade Ave., Garfield, N.J.
Enequist Chemical Co., Inc.,
100 Varick Ave., Brooklyn 37, N.Y.

F

Faesy & Besthoff, Inc.,
25 E. 26 St., New York 10, N.Y.
Fairfield Chemicals Div., FMC
441 Lexington Ave.,
New York 17, N.Y.
Fallek Products Co., Inc.,
4 W. 58 St., New York 19, N.Y.
Fine Organics, Inc.,
205 Main St., Lodi, N.J.
Fisher Scientific Co.,
1 Reagent Lane, Fair Lawn, N.J.
Flag Sulfur & Chemical Co.,
P.O. Box 5737, Tampa 5, Fla.
Florida Agricultural Supply Co.,
P.O. Box 658, Jacksonville, Fla.
Fort Pitt Chemical Co.,
26th St., Pittsburgh 22, Pa.
Fresno Agricultural Chemical Co.,
P.O. Box 1286, Fresno 15, Calif.
Frontier Chemical Co.,
600 Doremus Ave., Newark 5, N.J.

G

Gallohur Chemical Corp.,
Ossining, N.Y.
Garden Products Co.,
3246 Grand Blvd., St. Louis 18, Mo.
Geigy Agricultural Chemicals,
P.O. Box 430, Yonkers, N.Y.
General Chemical Div., ACC,
40 Rector St., New York 6, N.Y.
Globe Chemical Co., 105 N. 15th St.,
Louisville 3, Ky.
James Good, Inc.,
107 Susquehanna, Philadelphia, Pa.
Great Lakes Chemical Corp.,
Filer City, Mich.
R. W. Greeff & Co., Inc.,
10 Rockefeller Plaza,
New York 17, N.Y.
Guard Chemical Co., Inc.,
North Water St., Ossining, N.Y.

H

M. W. Hardy & Co., 141 Broadway,
New York 6, N.Y.
Harshaw Chemical Co.,
1945 E. 97 St., Cleveland 6, Ohio
Hayes-Sammons Chemical Co., Inc.,
P.O. Box 633, Mission, Tex.
Heico, Inc., 25-27 N. Sixth St.,
Stroudsburg, Pa.
Henley & Co., Inc., 202 E. 45th St.,
New York 17, N.Y.
J.F. Henry Chemical Co., Inc.,
4 Station Sq., Rutherford, N.J.
Hercules Powder Co., Reasor-Hill Div.,
900 Market St., Wilmington, Del.
Hewes Gotham Co., 107 W. 43rd St.,
New York 5, N.Y.
Hooker Chemical Corp.,
603 Buffalo Ave., Niagara Falls, N.Y.
Hoosier Solvents & Chemicals Corp.,
1650 Luett, Indianapolis 22, Ind.
Hopkins Agricultural Chemical Co.,
P.O. Box 584, Madison 1, Wisc.
Howe & French, Inc., 99 Broad St.,
Boston 10, Mass.
Hub States Chemical & Equipment Co.,
1255 Windsor, Indianapolis 1, Ind.

I-J-K

Industrial Materials Co.,
1017 McCall St., Houston 70, Texas
International Commodities Corp.,
11 Mercer St., New York 13, N.Y.
Kaufholz & Co., Lansdowne Bldg.,
Lansdowne, Pa.

L

Lebanon Chemical Corp., P.O. Box 532,
Lebanon, Pa.
O. E. Linck Co., Inc., Rts. 3 & 46,
Clifton, N.J.
Lobel Chemical Corp., 165 Broadway,
New York 6, N.Y.
Lorenz Chemical Co.,
17th & Nicholas Sts., Omaha 2, Neb.
Los Angeles Chemical Co.,
4545 Ardine St., South Gate, Calif.

M

McLaughlin Gormley King Co.,
1715 Fifth St., Minneapolis, Minn.
Neil A. Maclean Co., P.O. Box 853,
Belmont, Calif.
Mallinckrodt Chemical Works,
3600 2nd St., St. Louis 7, Mo.
Mercury Chemical Co.,
3437 Halsted St., Chicago 13, Ill.
Michigan Chemical Corp.,
579 Bankson St., St. Louis, Mich.
Michlin Chemical Corp.,
9045 Vincent St., Detroit 11, Mich.
Miller Chemical & Fertilizer Corp.,
3006 Cold Spring, Baltimore, Md.
Miller Products Co.,
7737 Killingsworth, Portland, Ore.
Mineral Fertilizer Co.,
P.O. Box 206, Midvale, Utah
Minerals & Chemicals Philipp Corp.,
28 Essex Trnpk., Menlo Park, N.J.
Monsanto Chemical Co.,
800 Lindbergh, St. Louis 66, Mo.
Montrose Chemical Co.,
104 Lister Ave., Newark 5, N.J.
Morton Chemical Co., Agricultural Div.,
110 N. Wacker Dr., Chicago 6, Ill.
Mutchler Chemical Co., Inc.,
259 Broadway, New York 7, N.Y.

N

Nalco Chemical Co., 6216 W. 66 Place,
Chicago 38, Ill.
Naugatuck Chemical, Naugatuck, Conn.
N. Y. Quinine & Chemical Works,
100 Church St., New York 8, N.Y.
N. Y. Scientific Supply Co.,
28 W. 30th St., New York 1, N.Y.
Newton Chemical & Supply Co.,
Bridgeville, Del.
Niagara Chemical Div.,
FMC Corp., Middleport, N.Y.
Nott Mfg. Co., 200 S. Water St.,
Poughkeepsie, N.Y.

O

Ohio Solvents & Chemicals Co.,
3470 W. 140 St., Cleveland 11, O.
Olin Mathieson Chemical Corp.,
Mathieson Bldg., Baltimore, Md.

P-Q

Patterson Chemical Co.,
1400 Union Ave., Kansas City, Mo.
Pearson-Ferguson Chemical Co.,
1400 Union Ave., Kansas City, Mo.
S. B. Penick & Co., 100 Church St.,
New York 8, N.Y.
Pennsalt Chemicals Corp.,
P.O. Box 1297, Tacoma 1, Wash.
Pest Control Equipment Co.,
24 N. Bond St., Mt. Vernon, N.Y.
Phelps Dodge Refining Co.,
300 Park Ave., New York 22, N.Y.
Phillips Brothers Chemicals, Inc.,
Coliseum Tower,
New York 19, N.Y.
Pittsburgh Plate Glass, Chem. Div.,
1 Gateway Center,
Pittsburgh 22, Pa.
Plant Food Corp., 3711 Medford St.,
Los Angeles 63, Calif.
Plant Products Corp., Kennedy Ave.,
Blue Point, L.I., N.Y.
Planters Fertilizer & Phosphate Co.,
Box 4857, Charleston Hts., S.C.
B. G. Pratt Co.,
204 21st Ave., Paterson 21, N.J.
Prentiss Drug & Chemical Co., Inc.,
101 W. 31 St., New York 1, N.Y.
Private Brands, Inc.,
300 S. 3rd St., Kansas City 18, Mo.
Pyrrole Chemical Corp.,
817 Spring Lane, Portsmouth, Ohio

R

Reade Mfg. Co., 135 Hoboken Ave.,
Jersey City 2, N.J.
Reichold Chemical Co.,
525 Broadway, White Plains, N.Y.
Residex Corp., Terminal Ave.,
Clark, N.J.
Riverdale Chemical Company,
220 E. 17 St., Chicago Hts., Ill.
Robeco Chemicals, Inc.,
25 E. 26 St., New York 10, N.Y.
G. S. Robins & Co.,
126 Chouteau Ave., St. Louis, Mo.
Robinson Brothers Chemicals, Inc.,
255 Randolph St., Brooklyn, N.Y.

Rockland Chemical Co., Inc.
Passaic Ave., W. Caldwell, N.J.
Rohm & Haas Co.,
Washington Sq., Philadelphia, Pa.

S

Schmitz-Schoenwaldt-Turner Co.,
20 Vesey St., New York 7, N.Y.
Schnee-Morehead Development Corp.,
111 N. Nursery Rd., Irving, Texas
Selco Supply Co., 109 Elm St.,
Eaton, Colo.
Shell Chemical Co., 50 W. 50th St.,
New York 20, N.Y.
Shepard Div. of Samincorp
425 Park Ave., New York 22, N.Y.
Sinclair Mineral & Chemical Co.,
6349 N. Clark St., Chicago 26, Ill.
Southern Fertilizer & Chemical Co.,
P.O. Box 1158, Savannah, Ga.
Southern Mill Creek Products Co.,
1906 Armenia Ave., Tampa 7, Fla.
Standard Oil Co. (Ohio),
Midland Bldg., Cleveland 15, O.
C. W. Staples, Inc., P.O. Box 328,
Presque Isle, Me.
J. U. Starkweather Co., Inc.,
241 Allens Ave., Providence 1, R.I.
Stauffer Chemical Co.,
380 Madison Ave., New York 17, N.Y.
Stecker Chemicals, Inc.,
45 N. Broadway, Ridgewood, N.J.
Steidle Chemical Co., Inc.,
1613 N.W. Pkwy., Louisville 3, Ky.

T

Taylor Chemical Co., Inc.,
P.O. Box 337, Aberdeen, N.C.
Tennessee Corp., 612 Grant Bldg.,
Atlanta 3, Ga.
Thompson Chemical Corp.,
3600 Monon St., Los Angeles 27, Calif.
Thompson-Hayward Chemical Co.,
P.O. Box 768, Kansas City 4, Mo.
Toledo Solvents & Chemicals Co.,
4051 South Ave., Toledo 14, Ohio
Triangle Chemical Co., 206 Elm St.,
Macon, Ga.
George Uhe Co., Inc.,
76 Ninth Ave., New York 11, N.Y.

U

Union Carbide Chemicals Co.,
270 Park Ave., New York 17, N.Y.
United Chemetrics, 600 S. 4th St.,
Richmond 4, Calif.
U. S. Borax & Chem. Co., Box 75218,
Sanford Station, Los Angeles 5, Calif.
U. S. Sanitary Specialties Corp.,
1001 Calif. Blvd., Chicago, Ill.
Utility Chemical Co., 145 Peel St.,
Paterson, N.J.

V

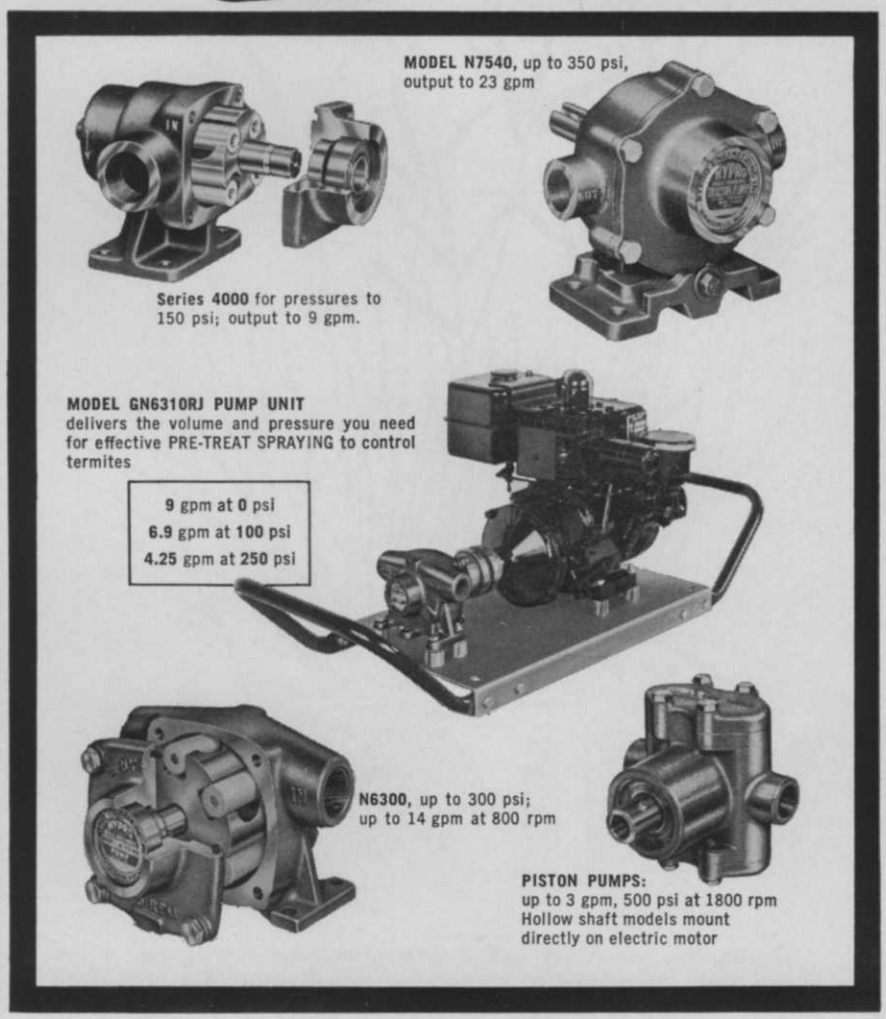
Velsicol Chemical Corp.,
330 Grand Ave., Chicago 11, Ill.
Vineland Chemical Co.,
Vineland, N.J.
Virginia-Carolina Chemical Corp.,
401 E. Main St., Richmond 8, Va.
Virginia Chemicals & Smelting Co.,
West Norfolk 10, Va.

W-X-Y-Z

White Cross Labs, Inc.,
1860 Broadway, New York 23, N.Y.
Wilbur-Ellis Co., P.O. Box 1286,
Fresno 15, Calif.
Wisconsin Solvents & Chemicals Co.,
1719 S. 83 St., Milwaukee 14, Wisc.
Wolverine Solvents & Chemicals Co.,
2940 Stafford, Grand Rapids, Mich.
Wood Ridge Chemical Corp.,
Park Place East, Wood Ridge, N.J.
Woodbury Chemical Co., 702 S. 4th St.,
St. Joseph, Mo.
Woolfolk Chemical Works, Ltd.,
Fort Valley, Ga.
York Chemical Co., Inc.,
23 Dean St., Brooklyn, N.Y.

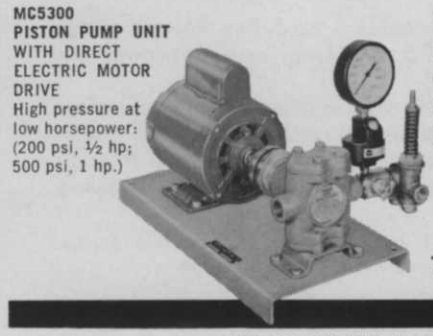
BUYERS' GUIDE FOR PEST CONTROL OPERATORS

PICK YOUR PUMP HERE



Hypro offers you the widest selection of low-cost pumps for pest control

Whatever your requirements . . . high pressure for wide coverage, resistance to strong chemicals, rugged durability for day-after-day performance . . . there's a Hypro pump to do the job. Not only may you choose from a dozen types and sizes, but you may also specify materials . . . nylon or buna-N rollers; cast iron, Ni-Resist, or bronze housings; rubber or leather shaft seals.



You can choose your power too. Hypro pumps operate at motor, gas engine and PTO speeds. You can supply the motor or buy the complete pumping outfit.

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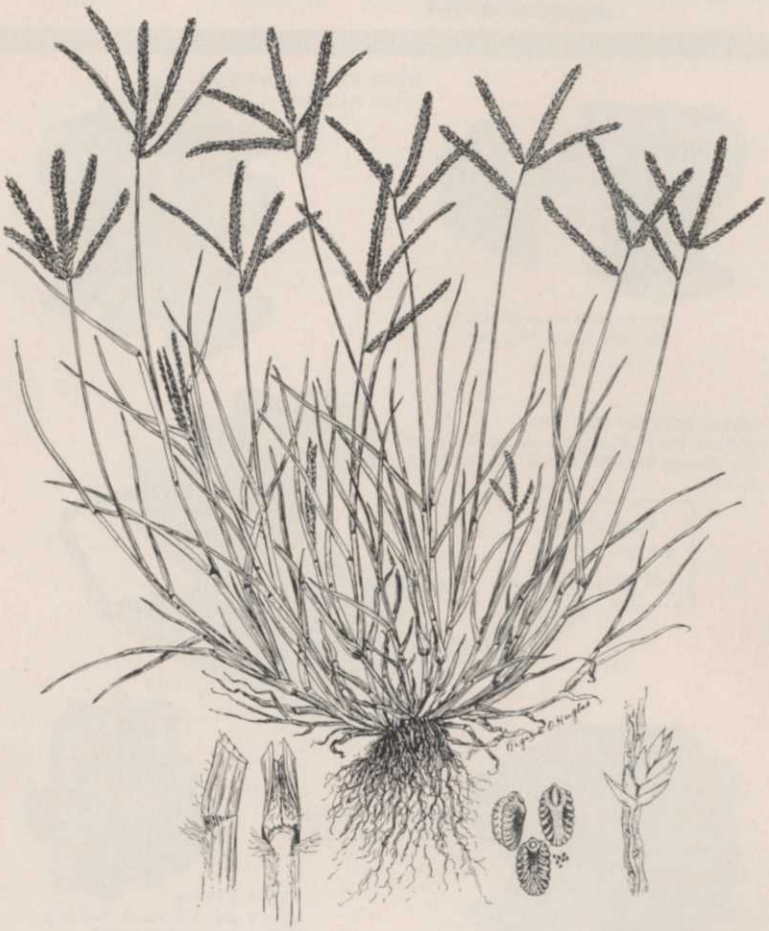
SEE US AT THE SHOW IN BOOTH NO. 35!

Know Your Species

GOOSEGRASS

(Elusine indica)



Goosegrass, sometimes called Wiregrass and Yardgrass, is an annual grass found in urban areas, lawns, yards, roadsides, and waste places. Widespread throughout eastern United States, goosegrass was introduced from the warmer parts of Asia. It is somewhat similar in appearance to crabgrass, but differs in that the digital spikes which bear the seeds are much broader than crabgrass spikes, and goosegrass does not root from joints on the prostrate stems as crabgrass does. Though described as pale green, goosegrass is a darker green than crabgrass. Goosegrass is particularly bothersome during the months from June to September.

Stems are flattened, smooth, and cover the ground in prostrate mats in tufts from fibrous roots. The stems may be from 6 inches to 2 feet long. Leaves are smooth, pale green with loose, flattened, and overlapping sheaths. Two to 10 spikes radiate from near the top of the stem. Spikes are ⅛ inch wide, 1 to 3 inches long; each has a row of spikelets attached on one side extending to the tip of the rachis (long axis).

Each of the 5 mm. long spikelets holds 3 to 5 tiny flowers, which produce seeds. Seeds are about 1.5 mm. long, reddish-brown, and cross-ridged.

Pre-emergent control is effected with calcium arsenate applied before seeds germinate in April or May. Additional treatments using disodium methyl arsonate (DMA) may be necessary if a few weeds get through. This should be applied when the weed is tender and actively growing.

Prepared in cooperation with Crops Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland.

DRAWING BY REGINA HUGHES, USDA, BELTSVILLE

Florida Spraymen's Convention Set for Miami Beach Nov. 8-10

Almost every branch of a contract applicator's business will be analyzed at the third annual convention of the Horticultural Spraymen's Association of Florida, Nov. 8-10, Deauville Hotel, Miami Beach.

Nearly 300 delegates are expected at the annual affair, association publicity director Thomas Hamall told *Weeds and Turf* at presstime.

An added feature at this year's meeting is the invitation to out-of-state spraymen who may wish to attend the Florida meeting. Hamall said all contract applicators may attend.

No three-day convention ever featured more fact-filled sessions, or a more delightful social program.

After HSAF president Larry Nipp officially opens the convention Thursday morning, an all-day series of talks and discussions will be offered.

Highlights of Thursday's program include an address by Dr. Stratton H. Kerr, entomologist from the University of Florida.

Basic lectures on the biology and control of insects, nematodes, and plant diseases, followed by a "question and answer period with the old pros," will round out Thursday's slate.

Thursday night, in the Deauville's pool area, delegates and their families will gather for a Hawaiian Luau.

Friday morning spotlights safety, with a talk by William J. Wiswesser, from the Industrial Hygiene Dept., Willson Products Co., Reading, Pa. Willson manufactures safety equipment.

"Equations for Small Business," a talk designed to help smaller companies operate more efficiently, will be offered by Dr. Grover A. J. Noetzel, Department of Economics, University of Florida, Gainesville.

Business meetings, visits to supplier's exhibits, a cocktail party, and a banquet are scheduled for Saturday.

CAs who would like to attend the HSAF annual convention should write Thomas Hamall, Publicity Director, 3291 N. W. 103rd. St., Miami Beach, Fla.

Kill all weeds and grasses either way with these powerful new herbicides from Chapman

WEED-FREE G *for dry application*—Applied dry in delivered form, by hand or with mechanical equipment. Contains Diurion, trichlorobenzoic acid (TBA) and sodium trichloroacetate (TCA) • Effective on all broad and narrow leaf weeds and grasses and woody vines • Excellent for spot treatment • Use in Spring, Fall and Winter.

NO-VINE *for controlling vines*—Applied dry in delivered form, by hand or with mechanical spreader • Contains granular form of 2, 3, 6 trichlorobenzoic acid • Kills top growth and root systems • Particularly effective on bindweed and other woody vines • Low application rate, long residual effect make No-Vine particularly economical.

WEED-FREE S *for spray application*—Wettable powder for application with mechanical or hand spraying equipment • Contains Diurion, Dalapon, and 2,4-D • Knocks down all weeds and grasses quickly; use during growing season • Non-corrosive to metal spraying equipment • Powerful . . . dependable . . . economical.

WEED FREE AEROSOL BOMB *ready-to-use pressurized spray*—Sell this convenient aerosol weed-killer for extra profits • Perfect for edging, trimming, and spot treatment of weed patches • Contains 3% Pentachlorophenol • Turns vegetation brown in only a few hours • E-Z Applicator extension wand makes it easy to use.

Chapman also distributes other weed control products from leading chemical manufacturers

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Please send me more information on Chapman herbicides.

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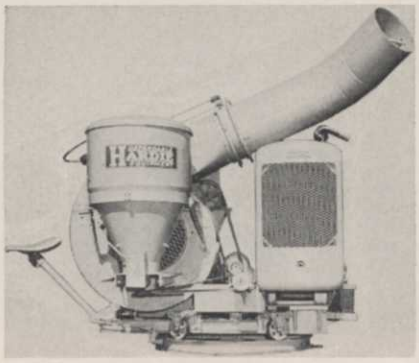

HARDIE AERO-MIST SPRAYER DUSTER

Here's the one unit that gives you just what you want . . . when you want it. The famous Hardie Aero-Mist Sprayer. It embodies the recommendations of State & Federal authorities; tree service organizations and foresters who sought in one unit a high-velocity ample air volume sprayer for any type job, along with low price.

With its high velocity, 150 mph, it is of special value in the treatment of trees infested with the bark beetle. Public Health officials also use the Hardie for mosquito control. With the attachment of the Hardie Duster, you have two machines in one. You can use either spray materials; dust or granular materials. Write for full details.

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Book Review

Weed Control As A Science

by Dr. Glenn C. Klingman, John Wiley and Sons, Inc., New York, 1961. 421 pp. $8.50.

Used either as a textbook, reference, or manual, *Weed Control As A Science* by Dr. Glenn C. Klingman, should be a part of the library of every person engaged in weed control.

Dr. Glenn C. Klingman, professor of field crops at North Carolina State College, assisted by Lyman J. Noordhoff of the United States Department of Agriculture, has produced a very complete and scientific work on weed control.

Dealing first with basic botany and chemistry, the book is adequately illustrated with some 200 drawings and photographs for easy understanding. Types of weeds, principles of seed dispersal and dormancy, as well as fundamentals of herbicide action on plant tissues, are discussed.

The author outlines not only the standard controls which have been used for years, emphasizing chemical methods, but also explains new developments in chemical control and specific new herbicides. Descriptions of the chemicals, their structure, and composition, aid in understanding these important facets of weed control.

Several of its 24 chapters are divided into applied phases of control: agricultural, industrial, aquatic, and horticultural. There is even a section on the mechanics of spraying apparatus. Others deal with types of soil, drift, sterilants, lawns, turf, and ornamentals.

Included also is a helpful appendix on weeds and susceptibilities of these plants to certain herbicides. Conversion factors for correctly formulating chemicals in any quantity are particularly useful. Charts of application rates, spray patterns, and speeds of spraying vehicles add to the book's practical value.

This book is excellent for the modern contract applicator.

Literature *you'll want . . .*

Here are the latest government, university and industrial publications of interest to contract applicators. Some can be obtained free of charge, while others are nominally priced. When ordering, include title and catalog number, if any. Sources follow booklet titles.

2,4-D for Post-Emergence Weed Control in the Everglades. Bulletin 532. University of Florida Experiment Station, Gainesville.

Bindweed: How to Control It. Bulletin 366. 40 p. il. Kansas Agricultural Experiment Station, Manhattan.

Chinch Bug Control and Subsequent Renovation of St. Augustine Grass Lawns. Bulletin. University of Florida Experiment Station, Gainesville.

Weed Control in Lawns. Folder F-261. Agricultural Experiment Station, Michigan State University Bulletin Office, P.O. Box 231, East Lansing.

Insects and Other Pests of Lawns and Turf. Bulletin S-96. University of Florida Experiment Station, Gainesville.

Recommendations for Commercial Lawn Spraymen. Bulletin S-121A. University of Florida Experiment Station, Gainesville.

Weed Control Practices for Home Lawns. Bulletin 61-7. 8 p. 1961. College of Agriculture Extension Service, University of Connecticut, Storrs.

A Comparison of Lawn Grasses. Bulletin 210. University of Florida Experiment Station, Gainesville.

Chinch Bugs. Leaflet 290. 2 p. Bulletin Clerk, New Jersey Agricultural Experiment Station, New Brunswick.

Home Gardeners' Lawn Insect Control Guide. Bulletin 213. University of Florida Experiment Station, Gainesville.

St. Augustine Lawn Grasses. Bulletin 217. University of Florida Experiment Station, Gainesville.

Quackgrass Control. Bulletin NCR-71. 1961. Agricultural Experiment Station, Michigan State University Bulletin Office, P.O. Box 231, East Lansing.

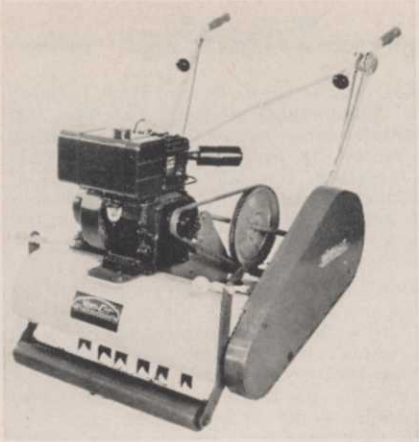
Turfgrass Disease Control Guide. Bulletin 221. University of Florida Experiment station, Gainesville.

Prevention and Control of Crabgrass in Lawns. Bulletin 642. 8 p. 1961. Connecticut Agricultural Experiment Station, New Haven.

Controlling Insects on Flowers. Agricultural Information Bulletin 237. Superintendent of Documents, Government Printing Office, Washington 25, D.C. 40¢.

Slick Spreader-Sticker. Technical Bulletin 101. 3 p. il. Star-Bar Div., Agricultural Specialties, 12200 Denton Dr., Dallas 34, Texas.

Principles of Selective Weed Control. Circular 505. California Agricultural Experiment Station, Public Service Office, 131 University Hall, 2200 University Ave., Berkeley 4.



With 26 blades and 52 cutting tips, West Point Products Corp.'s VC-3A Verti-Cut vertical cutter improves turfgrass surfaces by trimming runners and long grass.

West Point Products Offers Turfgrass Guides and Tools

West Point Products Corp., manufacturers of equipment for mechanical weed control, recommends the following program for turfgrass management, especially of golf greens:

(1) Aerify with either open or thatch spoons; (2) mow with a vertical cutter; (3) top dress; (4) mat; (5) aeri-spike; and (6) mow.

Tools available from West Point for the mechanical operations involved include 3 models of a vertical cutter, which the firm notes will remove the leaves from broadleaf weeds, crabgrass, clover and other weeds, allowing turfgrass to gradually "shade out" the undesirable foliage. The company emphasizes that weed leaves should be removed only as rapidly as the desirable turfgrasses can grow into the voids, noting that two vertical cuttings are usually sufficient.

Model VC-3A Verti-Cut, with 26 blades and 52 cutting tips, operates up to 4 mph, powered by a 4-HP Briggs & Stratton engine. Weighing 255 lbs., the model has an 18 inch cutting width and 27 inch over-all width. Height of cut is adjustable in $\frac{1}{32}''$ increments.

Aerification loosens the soil beneath the surface, producing a triple effect: cores of soil are scooped out so surrounding packed soil has room to expand; openings are made from surface to rootzone to admit air, water, and fertilizer; and walls for the openings are loosened so roots can penetrate into the surrounding soil. Five models or aerifiers are available from the firm.

To close openings created by aerification, and to open soil to water and fertilizer, West Point offers an aeri-spiker, which pushes the top dressing down into the turf. Controlled decomposition of the thatch is more easily accomplished when the top dressing is spiked, the firm notes.

West Point Products Corp. also offers interested CAs two free booklets, "Improving Athletic Field Turfgrass," and "Fall Renovation of Greens and Fairways." For copies of the booklets, and more information on any West Point products, write the company at West Point, Pa.

Calif. Studies Aquatic Weeds

With the establishment of a project in Davis, Calif., USDA Central Research Fund-supported studies of aquatic weed problems have begun in four areas. Other locations include Alabama, New York, and North Carolina.

In the Davis project, a laboratory has been especially fitted for chemical and plant physiological work. A screen house and culture tanks will soon be available for growing aquatic weeds for experiments

Problems are being approached from the viewpoint of both basic and applied aspects, and a program for the entire state is anticipated soon, a report from University of California Agricultural Extension Service states.

Diazinon for Lawn Pests Outlined

Information sheets on the use of Diazinon for lawn insect control, including recommendations for treating individual insect infestations, are available from Geigy Agricultural Chemicals, P.O. Box 430, Yonkers, N.Y., the firm announced recently.

Penn-Chem, Doggett-Pfeil Join

Penn-Chem Products recently announced its merger with Doggett-Pfeil Co., manufacturer and supplier of insecticides, fungicides, weed killers, and water soluble fertilizers.

Main office, manufacturing plant, and warehouses will be in Springfield, N.J., Penn-Chem announced. In addition to the Doggett-Pfeil office, Penn-Chem will maintain its present headquarters and warehouse facilities in Lansdale, Pa. Sale of products will be handled through Doggett-Pfeil, 191 Mountain Avenue, Springfield.

According to the company announcement, the new "jointure" will bring contract applicators a complete line of turfgrass chemicals available from one source.

Meeting Dates

Horticultural Spraymen's Assn. of Florida Annual Convention, Hotel Deauville, Miami Beach, Nov. 8-10.

North Central Weed Control Conference, Hotel Lowry, St. Paul, Minn., Dec. 3-5.

Northeastern Weed Control Conference, Hotel New Yorker, New York, N.Y., Jan. 9-11, 1963.

Southern Weed Control Conference, Admiral Semmes Hotel, Mobile, Ala., Jan. 16-18.

California Weed Control Conference, Santa Barbara, Jan. 22-24.

Aquatic Weed Control Society Annual Meeting, LaSalle Hotel, Chicago, Ill., Feb. 12-13.

Hydraulically powered aerial ladder from Utility Body Co. rotates in a complete circle, and elevates to 70° angle. Top controls enable CAs to direct ladder while working from it. Utility recommends the device for tree work, as well as allied activities such as bird control. For more information, write the firm at 1530 Wood St., Oakland, Calif.

—W & T Mailbox—

Appeal to Pro/Neophyte CA

I have been receiving copies of *Weeds and Turf* and I would like to say your approach is fine, in that you have articles for the person now in the herbicide applicating business, as well as information for those who want to go into the field, either with experience from allied activities, or as something new.

The needs of this business have finally arrived at the point where I feel weed control is of professional stature.

It seems that through your publication we will not only be able to learn of new herbicides and methods of application, but will also be able to pass on to others general technology we have gained through the years.

Once again let me say that you are doing us all a great service by instituting this publication.

Carl Nagle, Jr.

Vice-President, General Mgr.
Texas Weed and Grass Control, Inc.
Odem, Texas

Pioneer Weed Controller

I have been working for towns, counties, and public utilities on weed and brush control for many years, and am one of the pioneers in this field.

I am receiving, and reading with great interest, your publication, *Weeds and Turf*. I think it is very well put together, and the articles, as a whole, are well presented.

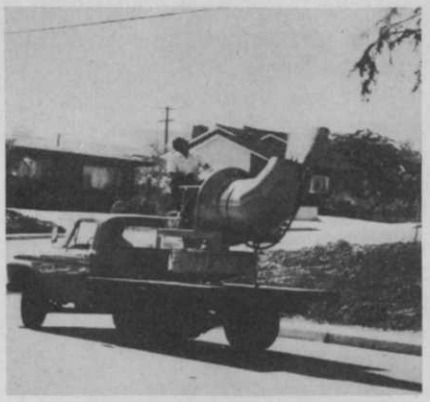
I do not have any suggestions at this time, but I believe a magazine such as yours will advance and achieve a stimulant that appeals to all your readers.

I wish you every success with your new publication.

J. Harrington Nicholson

President
J. H. Nicholson, Inc.
Mahopac, N.Y.

Weeds and Turf welcomes expressions of opinions from its readers. Send ideas and comments briefly as possible to Charles D. Webb, Editor, Weeds and Turf, 1900 Euclid Ave., Cleveland 15, Ohio.



One man Turn-A-Spray manufactured by Besler Corp. has finger-tip control, moves sideways or up and down. Throwing a column of high-velocity, high-volume air with fine mist or spray, blower will cover shade trees in minutes, the company says.

Watch for Pine Needle Scale

Identification of the pine needle scale, an insect common on home plantings and nearly all pines and spruces, is an important talent for CAs who spray ornamentals in conjunction with their lawn contracts.

Severe infestations of the destructive pest cause afflicted pine needles to turn yellow, then brown, and eventually to die.

Female scales on pine needles are pure white, about 1/10th inch long, and are wider at one end than the other. At the small end is a small oblong yellow spot.

Winter is spent in the egg stage. The female forms the white crust and turns to eggs under the crust. Then follows the "crawler" stage, which is the form that spreads over the plant. When the crawler finds a suitable spot on the needle, it settles down to suck sap, form a white scale, and turn to eggs.

This white covering is resistant to penetration of most insecticides except strong ones like lime-sulphur. Lime-sulphur can be applied only during the plant's dormant season or it will burn the tender leaves.

Cure For Moss-Infected Lawns

Moss growing in lawns indicates too little fertilizer, horticulturists at Purdue University say. It is encouraged by excessive shade and excessive moisture.

They recommend waiting until fall and cleaning the moss up by adding fertilizer. If it is quite thick, rake the moss, or spade the area, sow grass seed, and fertilize.

—Trimmings—

Well on the road. **Reader Dave Fleming of Philadelphia reports he has turf maintenance routes in 14 counties, serviced by two trucks that are self-supporting. It's taken a great deal of publicity—radio, TV, and newspaper—to get this new service on the road, but now "it looks good."**

* * *

Goose on the loose. We reported in July that a nurseryman in Pennsylvania had resorted to geese to control weeds in his shrubbery stock. Now a report from Oklahoma says a cotton farmer has also gone the goose route. Problem there, though, seems to be coyotes, who like the webfooted quackers as much as the birds like weeds. So the farmer has to sit by an electrified fence all day, armed with rifle and binoculars, to keep the wild animals from eating the fowls which are eating the weeds. In fairness, we hesitate to criticize anyone searching for more efficient means of squelching weeds, but this seems, at best, somewhat impractical.

* * *

One of the busiest men **in Florida these days is Ralph White, general manager of Ousley Sod Co. in Pompano Beach. Besides running his thriving business, Ralph is president of the Florida Turf-Grass Association, and works closely with CAs in the Sunshine State. Ralph is also scheduled to take part in the November convention of horticultural spraymen in Florida. Where does all the energy come from? Must be the Florida sun, and all the good, rich food we all get from attending so many convention banquets!**

* * *

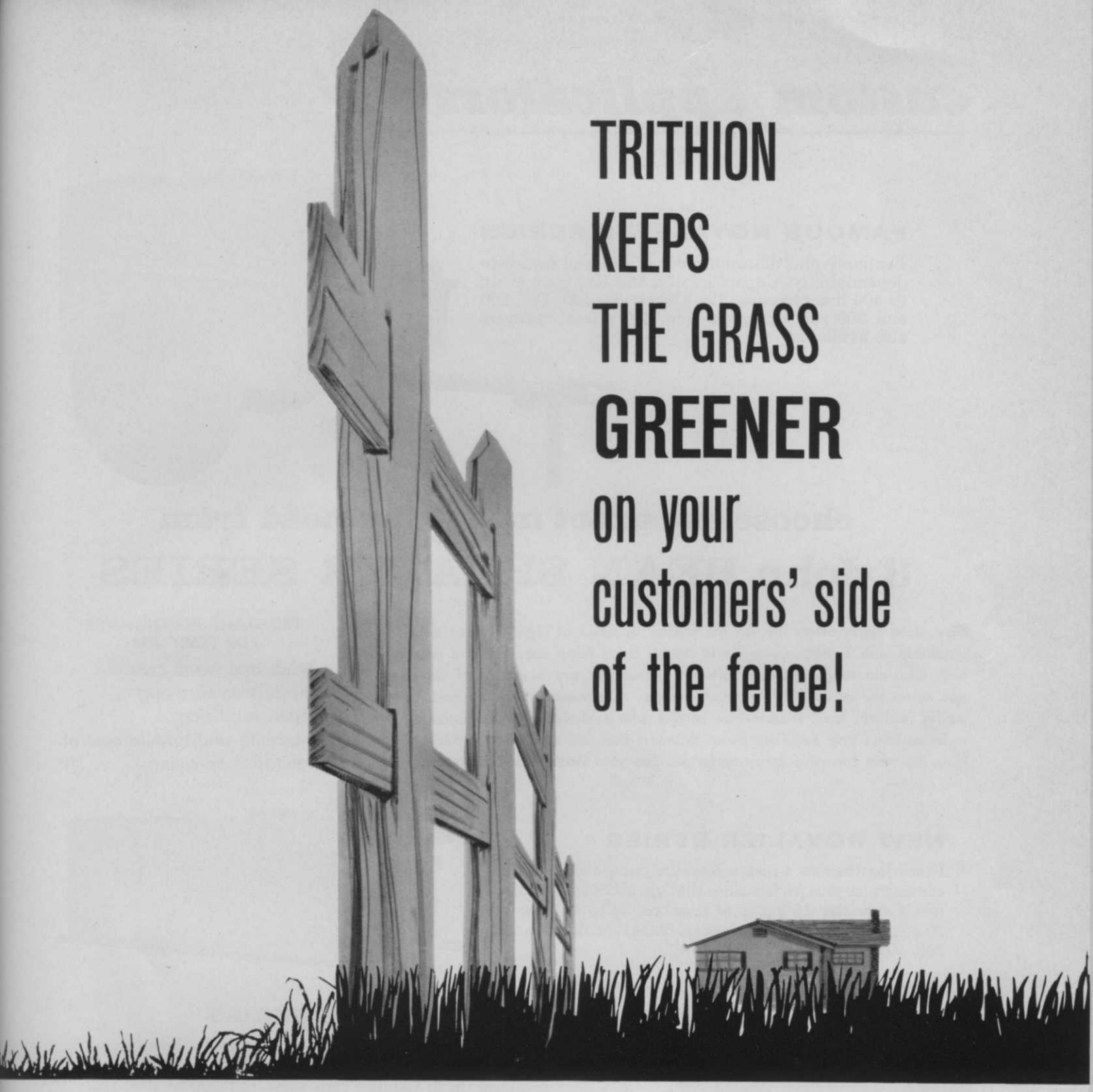
We just saw a letter to the editor of a local paper, in which a lady gardener protests, on behalf of her garden club, about the so-called misuse of pesticides. This worried do-it-yourselfer says she asked her club (about 40 ladies) how many read labels on their garden chemicals, and only four answered "yes." This, the lady proceeds, is the reason we need more laws about pesticides! Some hardworking CA, who's spent years trying to convince his customers that *labels* must be read, would no doubt like to refute this Rachel Carson-in-the-bud, since it is frequently the professional who gets unjustly blamed for the amateur's mistakes!

* * *

Speaking of fearful ladies, **we're sure everybody would calm down if they could see some of the elaborate laboratories our suppliers maintain to test new chemicals. We just returned from Ambler, Pa., where Amchem Products treated us to a tour of its lush weed farm. There all Amchem's new chemicals undergo extensive tests both for effectiveness and for safety. Passers-by on the super highway which runs alongside this flourishing farm must wonder who's growing such a strange looking crop!**

* * *

Midwestern CAs, take a tip from your neighborhood lawn and garden center. We recently motored about the countryside, one Sunday, and saw nursery after nursery advertising products for those recent invaders, chinch bugs. If your customers don't know about this newly arrived threat, be sure you set them straight. Next summer you'll no doubt be getting lots of calls about this persistent pest.



Use TRITHION® insecticide for lawn chinch bug control. Chinch bugs are small sucking insects that feed on the juice in leaves and stems of grass, causing brown patches and eventual death of infested lawns. Chinch bug destruction is a growing problem around the country . . . but a problem you can solve for your customers with TRITHION.

Since 1960, thousands of lawns have been treated with TRITHION. Results have been spectacular!

TRITHION *gives quick, positive control.* It's a fast-acting compound that controls *all* chinch bugs, including those strains that have become resistant to other materials. ®Stauffer's Reg. T.M. for an insecticide-acaricide

TRITHION *is easy to handle safely.* It is less hazardous to handle than many other organic phosphorus pesticides. TRITHION is an easy-to-apply emulsifiable liquid . . . and also is available in granular form.

TRITHION *offers one-shot control . . . that lasts.* Repeat sprays are rarely needed with TRITHION—"one-shot control" *stops* chinch bugs. Its long residual action means long-term protection . . . with resulting reduced costs.

Use TRITHION on your customers' lawns. Remember—TRITHION keeps the grass greener on their side of the fence . . . and on yours, too! For details, write Stauffer Chemical Company, Agricultural Division, 380 Madison Avenue, New York 17, N.Y.

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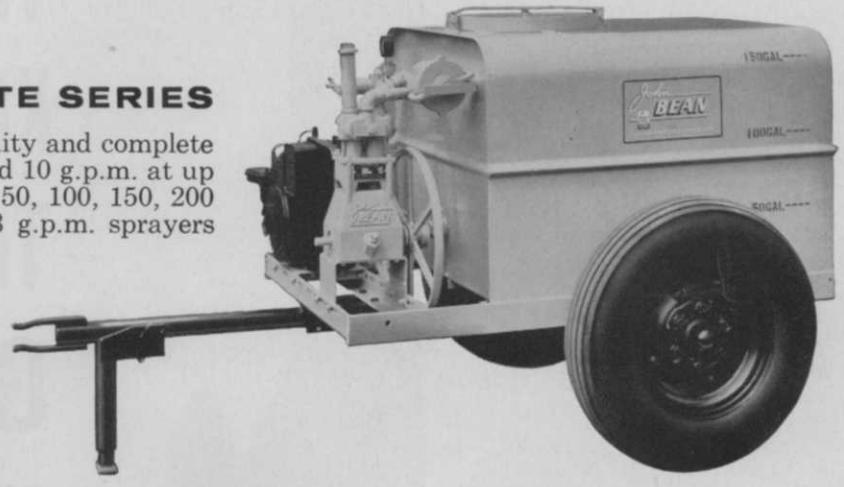
Economy plus all-around versatility and complete dependability. Capacities of 5 and 10 g.p.m. at up to 400 lbs. pressure. Tank sizes: 50, 100, 150, 200 and 300 gal. Complete line of 3 g.p.m. sprayers also available.



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Now, John Bean offers the CA the widest selection of high pressure sprayers available with 3 complete series to choose from! Pump capacity and pressure, tank size, mounting type and sprayer accessories are a matter of choice — you select the model that fits your business requirements exactly. And, every model features long, trouble-free service with exclusive Bean Bond corrosion-resistant tanks and Sapphite pump cylinders that are so hard they resist wear from the most corrosive spray materials. See your dealer for complete details.

PROFITABLE PERFORMANCE FOR EVERY JOB:

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- shade tree spraying
- liquid fertilizing
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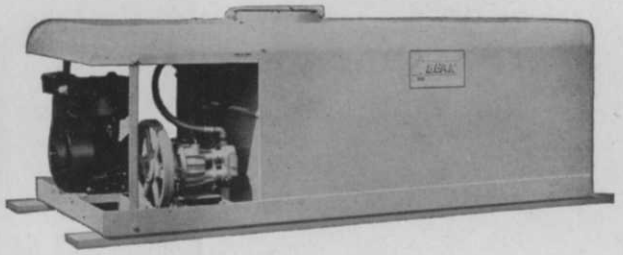
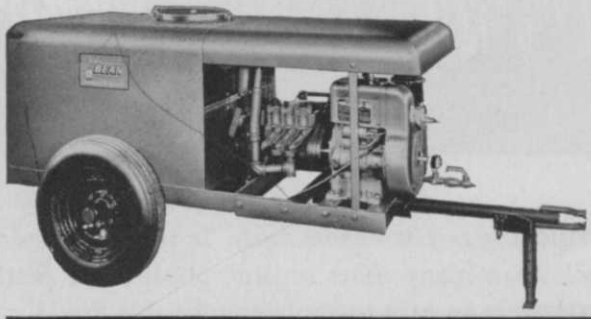
- sanitation spraying

NEW ROYALIER SERIES

Featuring the new 4-piston Royalier pump that combines compactness plus performance that's practically pulsation-free. Capacities: 15 g.p.m. at pressures up to 400 lbs. and 20 g.p.m. up to 300 lbs. pressure. Tanks available in 200, 300, 400 and 500 gal. sizes.





RUGGED ROYAL SERIES

For big capacity spraying. Three capacities to choose from: 25 g.p.m. at up to 700 lbs. pressure; 35 and 60 g.p.m. at pressures up to 800 lbs. Tank sizes from 200 to 1000 gal.

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